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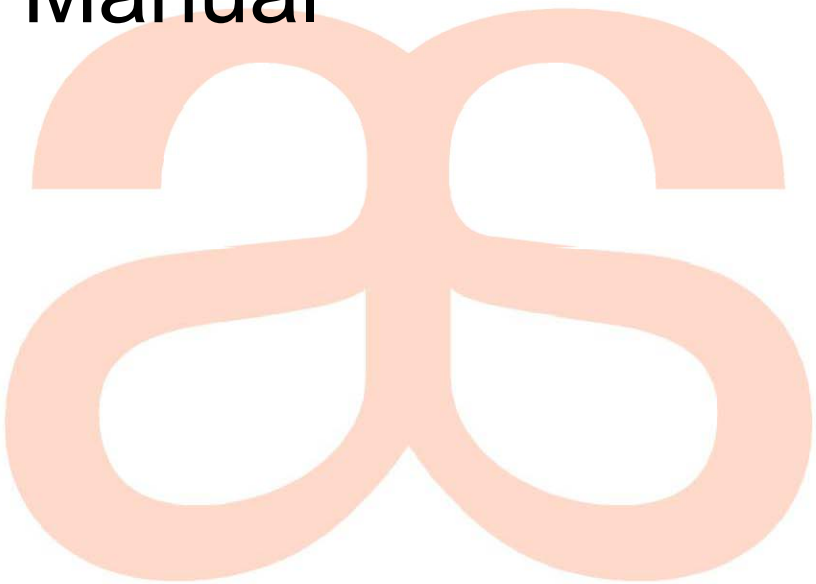
Asis ATCA
Shelf Manager Board
User Manual



June 2007

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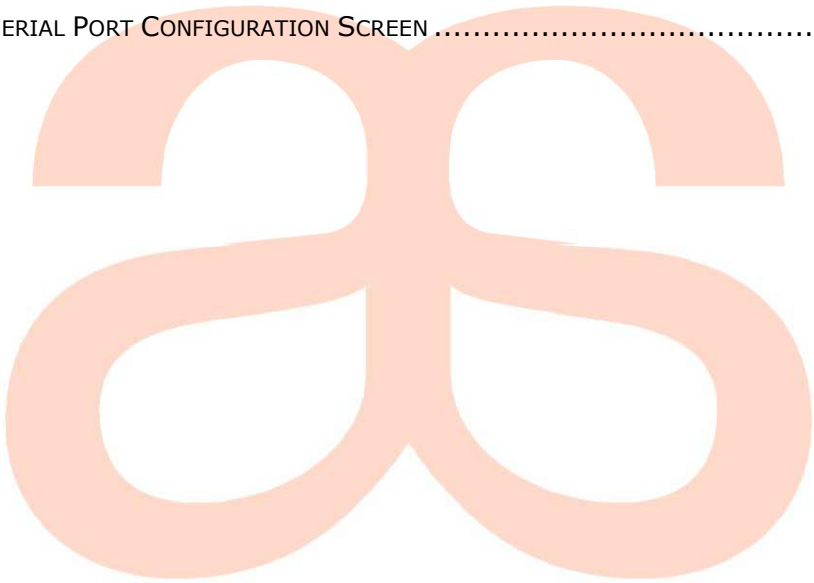

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Asis warranty will be for the quality of the Asis ATCA Shelf Manager Board for a period of one year after the shipment of the product.

Asis may make changes to specifications and product descriptions at any time, without notice.

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Contact Information

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Safety Instructions

This symbol indicates potential safety hazards regarding product operation or maintenance to operator or service personnel.

General Safety Practices

Before handling the board, read the instructions and safety guidelines on the following pages to prevent damage to the product and to ensure your own personal safety.

- Always use caution when handling/operating the board. Only qualified, experienced, authorized electronics service personnel should access the interior of the equipment.
- Always follow the procedural instructions for component removal and replacement in sequence.

Working with Lithium Batteries

Your Shelf manager board may have a non-rechargeable lithium battery.

- Do not short circuit
- Do not heat or incinerate
- Do not charge
- Do not deform or disassemble
- Do not apply solder directly
- Do not mix different types or partially-used batteries together
- Always observe proper polarities.

Revision History

Number	Date	Comments	Author
1.0.0	May 2007	Initial release	Yossi Kuzi

About this Document

This document provides technical information for the Asis Perform 14 slots Shelf manager.

It is intended for technical staff tasked with installing, setting up and configuring the system, and providing troubleshooting assistance and servicing.

Related Documents

Instructions relating to software installation and documentation for application software development for this platform are available in the *Shelf Manager External Interface Reference Manual provided by peigon point to Asis*.

Instructions relating to software installation and documentation for application software development for this platform are available in the Shelf Manager External Interface Reference Manual.

For Asis product information and additional resources, please visit the Asis website at **www.asis-pro.com**.

Downloads (manuals, release notes, software, etc.) are available via the Technical Support Library product links at **www.asis-pro.com (for registered customers)**.

Information about PICMG (PCI Industrial Computer Manufacturers Group) and the ATCA standard may be accessed on the PICMG Web site at **www.picmg.com.**

Chapters and Their Contents

1	**Introduction**	General overview of the product family and the board.	Pg. 10
2	**1 Understanding the Board Com**	the functional features and components of the board	Pg. 13

	pone nts		
3	**Software Commands**	this chapter contains the software commands needed to manage the shelf	Pg. 20
4	**Asis ATCA Shelf Acronyms**		pg. 24

Style Conventions

Verdana	Regular text.
Arial Bold	Commands, keys and other parts of the user interface.
Arial Italics	Names of classes, methods, arguments, exceptions, properties, etc. Also used for special terms, the first time they appear.
`Monospace`	Text displayed on the LCD or on a computer attached to the product.
	Notes, which offer an additional explanation or a hint on how to overcome a common problem.
	Warnings, which indicate potential safety hazards regarding product operation or maintenance to operator or service personnel.

2 Introduction

2.1 Shelf manager Board

The ASIS ATCA shelf is designed to comply with all relevant ATCA specifications, including the IPMI (Intelligent Platform Management Interface) specifications.

The Shelf Manager monitors the shelf temperature sensors, collecting status information, generate alarms, control the indication displays and the fan trays.

It's of remote control capable. It supports multiple management interfaces, including: RMCP, RPC, SNMP, CLI and Web Interface.

Introduction

Shelf manager Board

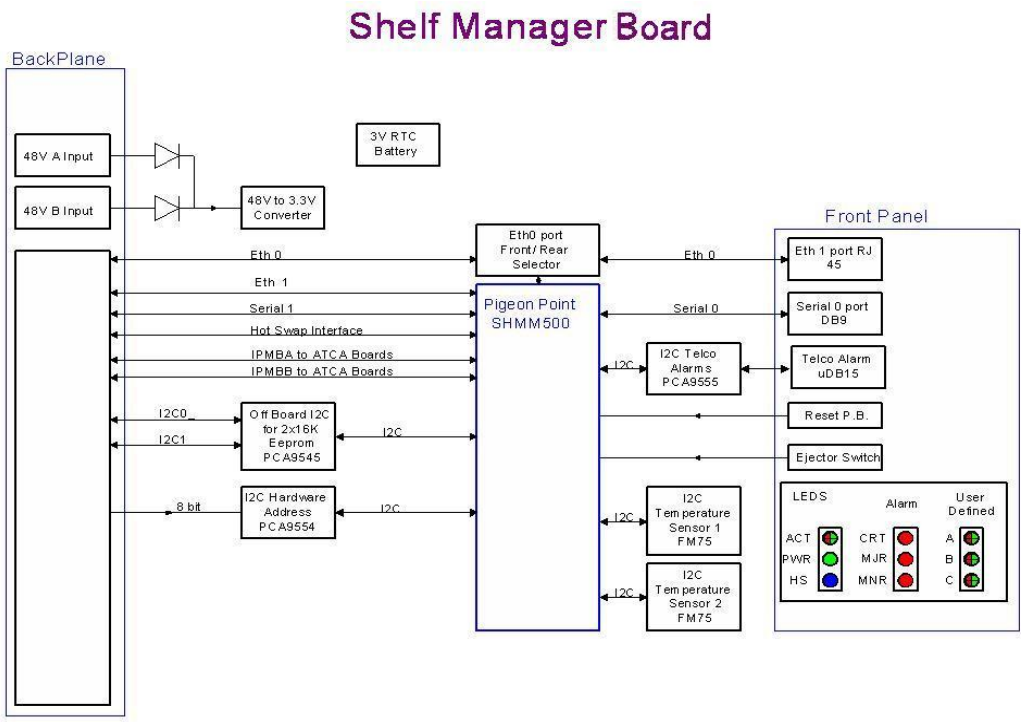


Figure 1 - Block Diagram of Shelf Manager Board

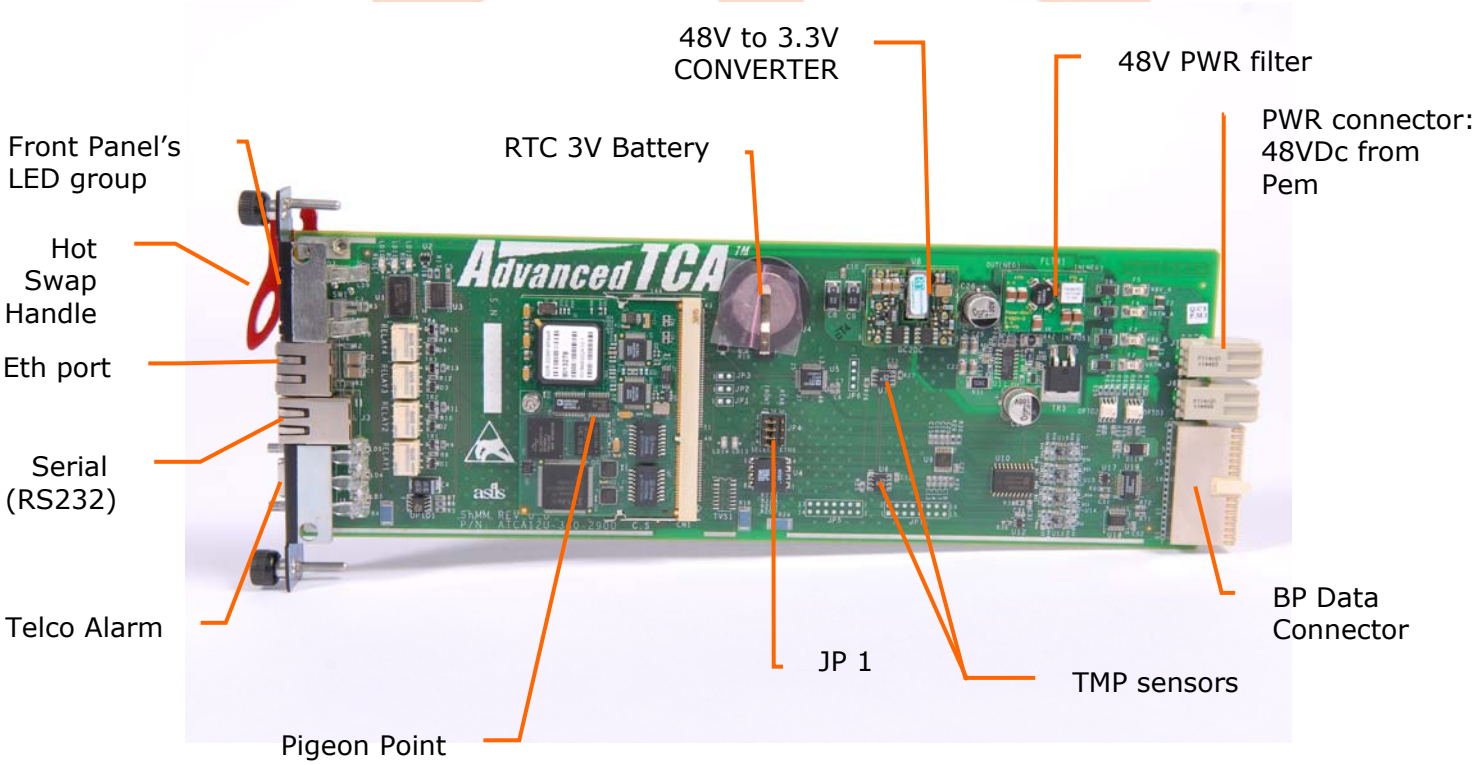


Figure 2 – Board Layout

2.1.1 Features

The Shelf Manager Board is an FRU with the following features and functionality:

- Fan tray control – controlling the fan trays thru the IPMB
- Providing 3.3V to other parts of the board
- Intake air temperature monitoring
- LED Alarms display
- Telco Alarms control and display
- Hosting of the Pigeon point **ShMM500** management module
- Front Ethernet connection.
- rear Ethernet connection.

2.1.2 Front Panel

The Shelf Manager board's front panel contains the display as shown in figure 3 :

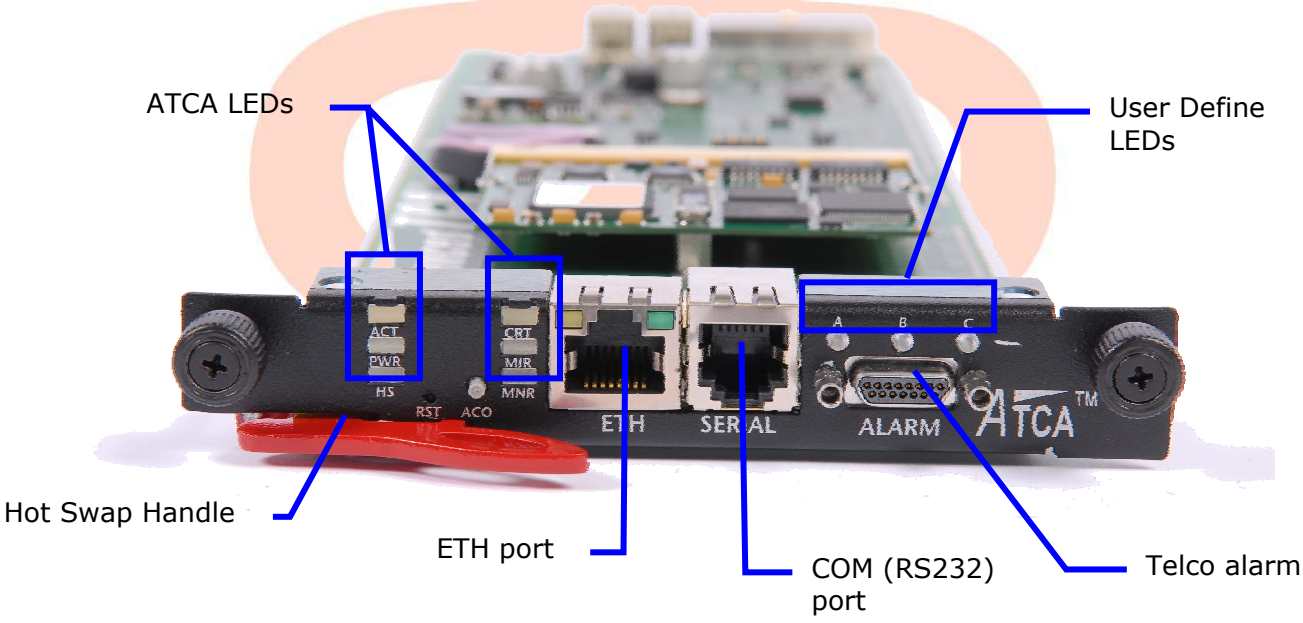


Figure 3 – Front Panel

3 Understanding the Board Components

This chapter summarizes the functional features and components of the board. The board was designed to withstand extreme conditions (to meet rigid Telco requirements). It is a Field-Replaceable Unit (FRU), and is fully field-serviceable.

3.1 Visual Indicators

The front panel of the shelf manager board features nine LEDs arranged in three groups:

- General LEDs
- Alarms
- Application-defined LEDs.

Boot-up LED Status

At Power up all LED's light up for about 40 seconds during shelf manager board boot-up.

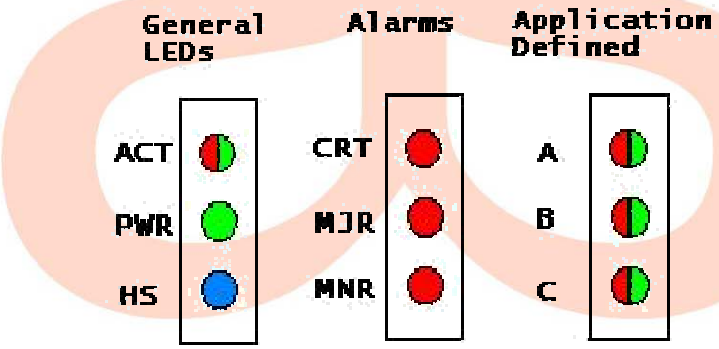


Figure 4 – LED's on the shelf manager Board Front Panel

LED Functions: General LEDs

LED	Status	Meaning
ACT	Green	Shelf manager board active
	Red	Shelf manager board failure
	Blink	Shelf manager board inactive
PWR	Green	Local voltage supply on Shelf manager board
	Off	Local voltage failure
HS (hot swap)	Steady Blue	Shelf manager board powering up or ready for extraction
	Blinking blue	Shelf manager board hot swap process
	Off	Shelf manager board operating

LED Functions: Telco Alarm LEDs

LED	Status	Meaning
CRT (Critical)	Off	Normal operation
	Red	System alarm event
MJR (Major)	Off	Normal operation
	Red	System alarm event
MNR (Minor)	Off	Normal operation
	Red	System alarm event

LED Functions: Application-Defined LEDs

LED	Status	Meaning
A	Green/red/ bi-color	As defined by application
B	Green/red/ bi-color	As defined by application
C	Green/red/ bi-color	As defined by application

Upon completion of boot-up, LEDs will display as follows:

General LEDs		Telco Alarm LEDs	Application Defined LEDs
ACT	back to normal state	OFF	OFF
PWR	Remains ON		
HS	Lights steady blue for a few seconds, then begins blinking, then goes off after a few blinks		

When a user-defined dual color LED is on and colored green and red (as during boot-up), the visible color is **orange**.

3.2 External Connections

The shelf manager Board features three connectors on its front panel. pin-out description of each connector is provided in this section.

3.2.1 Telco Alarm Connector

The Telco Alarm Connector is a mini-D type 15 pin connector with the following pin definition:

Pin	Signal Name
1	Minor Reset Plus
2	Minor Reset Minus
3	Major Reset Plus
4	Major Reset Minus
5	Critical Alarm -NO
6	Critical Alarm -NC
7	Critical Alarm -COM
8	Minor Alarm – NO
9	Minor Alarm – NC

10	Minor Alarm – COM
11	Major Alarm – NO
12	Major Alarm – NC
13	Major Alarm – COM
14	Power Alarm – NO
15	Power Alarm -COM

3.2.2 Serial RS232 (Console) Connector

The Serial RS232 (Console) connector is a RG 11, DTE serial port with the following pin-out definition, looking form the front the first pin is on the left:

Pin	Signal name	Description
1		not connected
2	RxD	In Receive Data
3	TxD	Out Transmit Data
4		not connected
5	SGND	Signal Ground
6		not connected

3.2.3 Ethernet Connector

The Ethernet connector is a standard RJ45-8 jack with the following pin-out definition , looking form the front the first pin is on the left:

Pin	Signal Name	Description
1	TxD+	Out Transmit Data Plus
2	TxD-	Out Transmit Data Minus
3	RxD+	In Receive Data Plus
6	RxD-	In Receive Data Minus

The following is indicated by the Ethernet connector LED's:

- Green – Line activity;
- Yellow – 100Mbs.

3.3 Jumpers

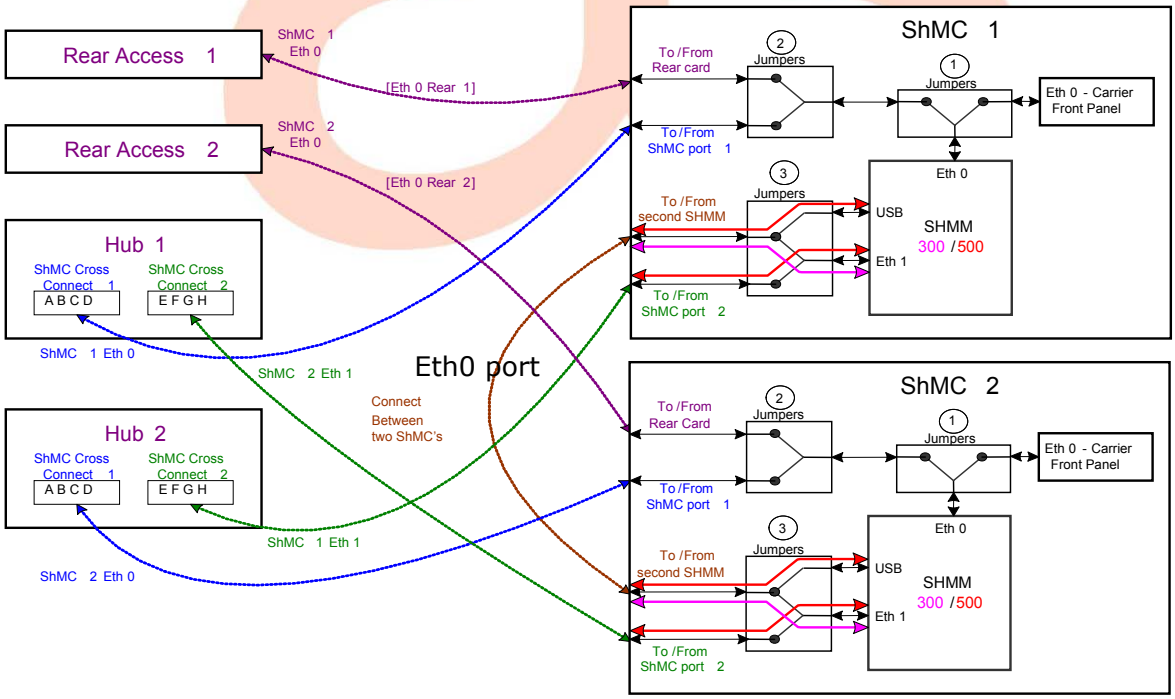
one jumper is used to select the connection of the Ethernet and Console ports either to the Shelf manager board's front panel, or to the rear connector board's panel.

The jumper, located on the Shelf Management card, is marked: **JP4**.

JP4 selects the connectivity between the Front panel and backplane access.

All four connectors must be connected to the same position (pins 1-2 or 2-3) and they function as follows:

- Jumpers connected between pins 1-2: the front connection is active
- Jumpers connected between pins 2-3: the rear connection is active.



3.4 Inserting the Shelf Manager Card

➔ **To insert the carrier board:**

1. carefully Insert the Shelf Manager card on the slot, making sure Inserting the insertion lever into the right position and that it plugs firmly into it's place .
2. Fasten the locking screws on both top & bottom of the board's front panel.
3. Make sure that after about 40 seconds the blue led (hot swap) is off.

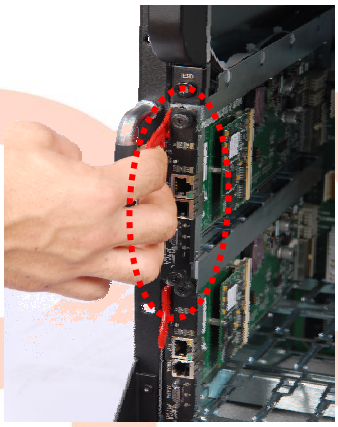


Figure 5 – shelf manager Board Insertion

3.5 Shelf manager Board Battery Replacement

The Shelf Manager board contains a lithium battery. There is a danger of explosion if the battery is incorrectly replaced or handled.

Do not disassemble or recharge the battery. Do not dispose of the battery in fire.

When the battery is replaced, the same type or an equivalent type recommended by the manufacturer must be used.

Used batteries must be disposed of according to the manufacturer's instructions.

➔ **To replace the battery:**

1. Lift the battery clamp and remove the old battery.
2. Insert a new CR2016 lithium battery or equal.
3. Release the clamp.

The battery exchange must be completed within less than **one minute**.

Battery Backup Characteristics

- Battery Voltage: 3V
- Battery Capacity: 48mAh
- Power applied for 24 hours per day
- Electrochemical Construction:
  Long-life lithium with solid-state cathode.

4 Software Commands

4.1 General

The ASIS shelf manager Board contains software necessary to manage the shelf and communicate with the intelligent management control software from an external console.

The external interfaces supported include:

- a command-line interface (CLI).
- a WEB interface.
- a Simple Network Management Protocol (SNMP) interface.
- a Remote Management Control Protocol (RMCP) interface.

Administrators can access the shelf to retrieve information on the current status of the shelf, including:

- current FRU population.
- current sensor values.
- threshold settings.
- recent events.
- overall shelf health.

Please refer to the *Shelf Management External Interface Reference Manual provided by Pigeon Point* for further details on programmatic interface with the shelf.

4.2 Console Connection

A dumb terminal or a PC with terminal-emulation software should be connected to the RS232 **Console** port on the active Shelf Manager board.

Serial D type 9 pin female to rj11 converter with RJ11 communications cable is required.

When a PC terminal emulator is used, the communication cable should be connected to a free communications port (COM1 or COM2), and the connection should be defined in the HyperTerminal program (see Figure 6).

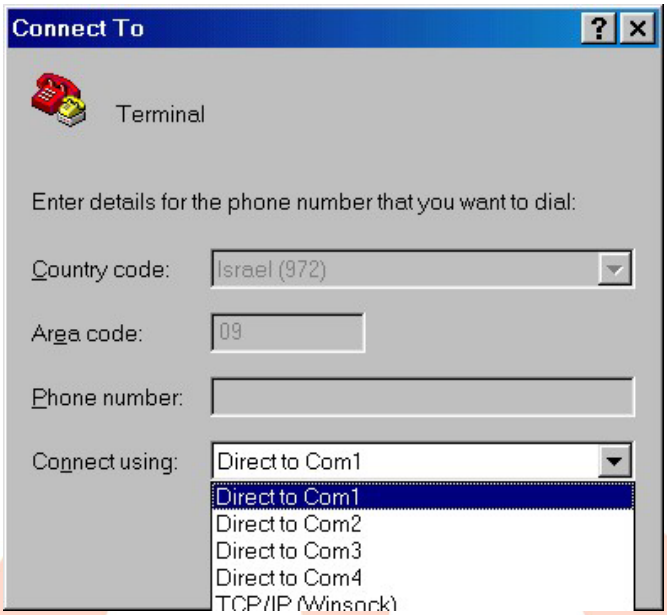


Figure 6 - The HyperTerminal screen

The following parameters should be defined in the **Port Settings** tab of the COM **Properties** dialog , see Figure 7 :

- Bits per second
- Parity
- Stop bits
- Flow control.

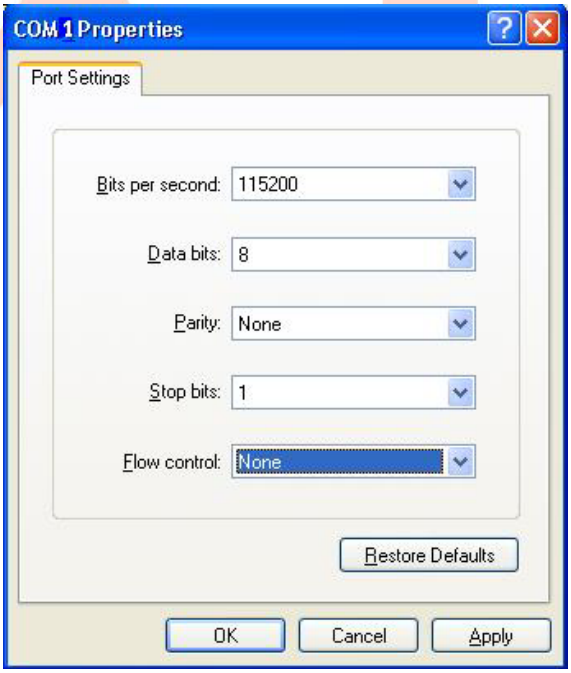
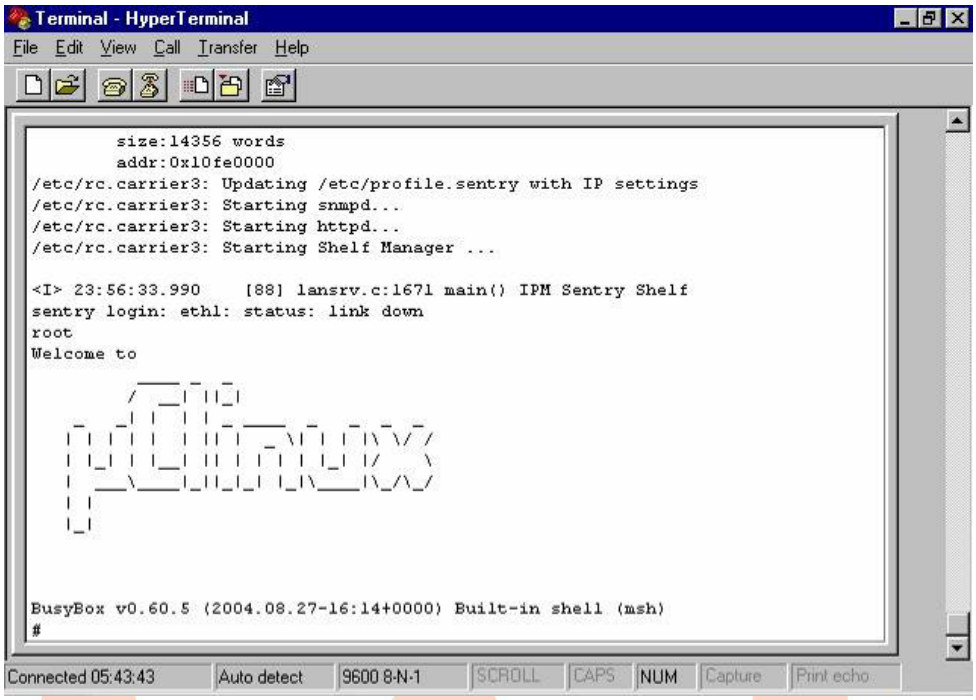


Figure 7 - Serial Port Configuration Screen

4.3 Management Commands

At start-up, the Shelf Management program requires user identification. The default login name is: **`root with no password`**.

After login, the following screen will be displayed in the console (**Terminal**) window:



CLI (Command-line interface) Entry to the Management System

Commands can be typed after the "#" prompt. Commands to the Shelf Manager begin with keyword "**`clia`**".

For example:

# clia help	help on line commands
# ifconfig	get shelf IP address
# clia sensordata 86 48	get temperature data from board in slot 3 (on-board sensor 48)
# clia fans	Get data on fan health and speed
# clia sensor 86	Displays all sensors in board
# clia alarm 0	Clear all alarms

there is a variety of commands for the shelf manager , which allow to control & monitor number of parameters, including: temperature, fans tacho-meters, PEM sensors, etc'.

All of the commands can be found in the Shelf manager EIR - External Interface Reference user manual , in order to retrieve this user manual please contact an Asis representative as shown at the start of this document.

5 Asis ATCA Shelf Acronyms

Acronym	Meaning
ATCA	Advanced Telecom Computing Architecture
FRU	Field-Replaceable Unit
HS	Hot swap
PEM	Power Entry Module
IPMB	Intelligent Platform-Management Bus
IPMI	Intelligent Platform-Management Interface
RTM	Rear Transmission Module
NEBS	Network Equipment-Building Systems
ShMC	Shelf Manager board
ETSI	European Telecommunications Standards Institute
ANSI	American National Standards Institute
CE	"Conformité Européene" ("European Conformity")
FCC	Federal Communications Commission
UL	Underwriters Laboratories - safety standards
CFM	Cubic Feet per Minute – Airflow measurement unit